

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Haran on March 14, 2008.

The application has been amended as follows:

#### **Claim 2 (Currently amended)**

A dispensing device, comprising:

an electrode substrate having a plurality of separate electrodes formed in correspondence with each of a plurality of pressurized chambers to be filled with a solution containing a biological sample;

a pressurized chamber substrate disposed so as to face said electrode substrate in a minute gap, having a discharge mechanism for adjusting the pressure inside said pressurized chamber by mechanical displacement of an elastically deforming diaphragm with an electrostatic force corresponding to a potential difference with said separate electrodes, and discharging said solution from a nozzle hole;

a drive voltage generation circuit, connected between said diaphragm and said separate electrodes, for applying a drive voltage of a prescribed waveform between said diaphragm and said separate electrodes in order to discharge said solution from said nozzle hole;

a current detection circuit, which is connected between said diaphragm and said separate electrodes, ~~for detecting~~ **configured to detect** a current flowing between said diaphragm and separate electrodes during the period from the rising edge of the pulse of said drive voltage to the termination of discharge of the solution; and

discrimination means for **comparing the detected current with a pre-stored normal current and for** discriminating the existence of a defective discharge of the solution as a result of whether a peak waveform of a differential waveform of the current detected during the period with the current detection circuit appears on the positive side two consecutive times.

**Claim 26 (Currently Amended)**

The dispensing method according to claim 25, ~~wherein a microarray is prepared~~ **further comprising a step of preparing a microarray** by spotting said solution containing a biological sample on an array.

**Claim 27 (Currently Amended)**

The dispensing method according to claim 25, ~~wherein a protein chip is prepared~~ **further comprising a step of preparing a protein chip** by spotting said solution containing a biological sample on an array.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance:

Fujii et al. (US 5,563,634) disclose a piezoelectric ink jet head drive apparatus comprising an electrode substrate having a plurality of electrodes formed in correspondence with a plurality of pressurized chambers bounded by a diaphragm and

a chamber substrate that faces the electrode substrate. The apparatus also comprises a drive circuit for applying a voltage between the diaphragm and the electrodes in order to discharge ink from the nozzle of the ink jet head. Furthermore, the apparatus comprises a circuit that detects the drive voltage (and indirectly the drive current) applied to the piezoelectric element. The detection circuit compares the detected drive voltage with a predetermined value to detect any abnormal fluctuation in drive voltages. However, Fujii et al. do not disclose a discrimination means that detects the existence of a defective discharge based on whether the differential waveform of the detected current appears on the positive side two consecutive times.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/  
Examiner, Art Unit 1797

/Jill Warden/  
Supervisory Patent Examiner, Art Unit 1797